EDUCATION
RESEARCH SERVICE

ORIGINAL ARTICLE

Building a chiropractic academy of educators: *A needs assessment of selected faculty educators*

Michael J. Tunning, DC, ATC, MS, Dustin C. Derby, EdD, Kelly A. Krell-Mares, MEd, and Michelle R. Barber, MSW, DC

Objective: Professional demands have led to health-care educator specialization in research or patient care. The academy movement is an avenue that attempts to return prestige and importance to improved instruction. The authors performed a needs analysis of selected faculty at 3 chiropractic colleges to assess the need for, and willingness to participate in, an academy of educators program.
Methods: An expert-developed, pretested survey was deployed using SurveyMonkey. Analysis of variance and regression analysis were used to address 3 research questions related to the academy of educators program.
Results: The study achieved a 53% response rate and reflected that an overwhelming majority of chiropractic faulty members (89%) reported the need for an academy of educators. The study found no significant differences between faculty ranks, years of experience, and participation willingness.
Conclusion: A structured approach, such as an academy, to foster professional teaching development may create positive outcomes for an institution. Faculty educators were willing to engage in an efficient program that may improve teaching methods and create opportunities for collaborative working relationships, which signals the potential for wide acceptance of the program.

Key Indexing Terms: Academies and Institutes; Health Educators; Chiropractic; Educational Measurement; Faculty

J Chiropr Educ 2017;31(2):102–108 DOI 10.7899/JCE-16-14

INTRODUCTION

Professional demands on academic medical educators previously forced specializations into research, clinical care, or teaching. This shifted the primary focus of United States medical educators to scholarly productivity, with a secondary focus on patient care and created less focus on quality instruction.[1] This shift to emphasizing clinical care or research caused increased teaching loads for instructional faculty, significantly limiting the time and resources instructional faculty devote to conducting scholarship and improving teaching methodologies, both of which remain chief components in promotion and tenure. For instance, chiropractic educators at one institution reported teaching 2.7 times the course load and subsequently produced one-tenth the scholarly output of external doctoral faculty.[2] In addition, faculty members may also face continuing education requirements to maintain their licensure, further reducing time and resources devoted to improving instructional or scholarship acumen.[3]

To address this paradigm shift and promote improved teaching and scholarship, academic medicine established the academy movement.[4] An academy of educators is a structured faculty development program that creates a renewed focus on excellence in educational methods. Teaching academies bring prestige to teaching while contributing to colleges' missions by providing support and resources, like funding, learning materials, and workshops, for improved instruction and scholarship through a formal structured approach.[4]

Although actualized in various ways, academies can foster improved teaching by promoting the educational missions of colleges through advanced training of faculty members in educational methods.[5] Academies have successfully engaged faculty in the areas of scholarly production, led to instructional and curricular innovations, and demonstrated increased job satisfaction. This has led to increased organizational commitment and evaluation scores.[6] Additionally, the transformative impact of academies has developed faculty members who engage in greater leadership roles, enroll in advanced study through formal degree programs, develop new courses, and present work at educational meetings.[5–7]

A focused program, such as an academy, may help increase educational research from non–research-assigned faculty educators within chiropractic colleges. A faculty

body that is better informed of best practices in education delivery, instructional design, and assessment, can better meet the needs of an academic program. The goal of our study to conduct a needs assessment for such an academy within 3 chiropractic colleges. Three research questions guided the study:

1. Is a teaching academy needed or wanted? In addition, are there significant differences between faculty assignment, number of years taught, and respondent perception of the need for a program?
2. Is there a difference in willingness between junior and senior educators in faculty development involvement?
3. Does faculty rank or years in teaching predict gaps between what respondents believe are important characteristics of teaching and teachers?

METHODS

This research study was approved by the Palmer College of Chiropractic Institutional Review Board prior to deployment.

Participants

This study consisted of a convenience sample of chiropractic faculty from 3 chiropractic college campuses. The sample for this study consisted of all full- and part-time faculty members in clinical sciences, basic sciences, research, and clinical care, which totaled approximately 200 faculty members.

Instrumentation

A survey was developed and pretested with a group of chiropractic faculty to assist with understanding the content and face validity of items in the survey instrument. The instrument consisted of 77 questions: 9 were demographic; 3 related to prior educator/teacher training; 11 related to the need for and implementation of an academy of educators program; 6 concerned participation in continuing education (CE) for chiropractic specialty areas, teaching, and instruction; and 4 were about scholarship and curricular developments from CE participation.

In addition, 4 questions related to implementing curricular change from either scholarship or CE efforts, 12 concerned the importance of and corresponding personal strength in innovating areas of teaching (ie, updating lectures, new learning activities, etc), and 18 concerned the importance of and corresponding personal strength of teaching characteristics (ie, effective communicator, accessibility, content expert, etc). The remaining 10 related to scholarship and mentoring perceptions and activities. Although response scaling was similar across like questions, it differed across the instrument overall.

Procedures

One week prior to survey distribution, respondents received an email alerting them to the study; the email contained pertinent information about the study and stressed the importance of participation. After deployment using SurveyMonkey (SurveyMonkey, San Mateo, CA), the survey remained open for 2 weeks, and nonresponders may have received up to 3 reminder emails.

Variables Examined

The current study utilized several demographic variables as grouping variables: faculty rank (ie, instructor, assistant professor, associate professor, and professor), years of teaching experience (ie, $\leq$5 years, 6–10 years, 11–15 years, 16–20 years, or $\geq$21 years), and faculty assignment (ie, administration, basic sciences, clinical sciences, clinical care, and research).

In addition to grouping variables, we also examined several outcome variables, such as the need for a focused faculty development program and willingness to participate in a program, perceptions of the importance of differing characteristics in teachers and teaching, and whether these characteristics were a personal strength or weakness.

Data Analysis

Data analysis was quantitative and descriptive. The analysis of variance (ANOVA) procedure assessed significant differences between groups for questions regarding gender, age, and academic rank. Following a significant omnibus test, Tukey post hoc assessed group differences. When equality of variances were shown to be unequal through homogeneity tests, the Brown-Forsythe asymptotic F statistics served as the omnibus test and Dunnett T3 post hoc tests for differences between groups.

Gap analysis occurred by subtracting personal strength scores from importance scores. A negative gap would indicate that faculty reported that an innovation or characteristic was highly important but that they believed it was a personal weakness, whereas a positive gap would indicate that the faculty didn't feel that an innovation or characteristic was very important but believed it to be a high personal strength. Multiple linear regression evaluated the predictive qualities of faculty rank and years of teaching experience regarding the gaps between faculty educators' reported important and personal strength of teaching innovations and teacher characteristics, related to academic rank, utilizing the backward step method. Assessment of the model occurred using standardized β weights and t test statistics. Evaluation of significant change in model performance occurred using the significant F change statistic for each iterative model.

Although the ANOVA test will account for issues related to homoscedasticity, several other assumptions underlie both the use of ANOVA and multiple regression: normality, linearity, homoscedasticity for regression, and multicollinearity. The assumption of data normality is one assumption of both ANOVA and multiple regression analysis. Both histograms and Q-Q plots were examined to inspect all variables for skewness and the presence of outliers. Examination of histograms should indicate a bell-shaped curve and should not exhibit left or right skewing, while normality on a Q-Q plot would appear to look more like a linear line stretching from the bottom left to the upper right portion of an x-y axis. All data possessed a normal distribution, without the presence of outliers,

Table 1 - Descriptive Information Related to the Sample Demographics

	n	Percent
Gender		
Male	63	61.8
Female	39	38.2
Age		
30–39	15	15.2
40–49	17	17.2
50–59	36	36.4
60 or more	31	31.3
Academic rank		
Instructor	12	12.1
Assistant professor	20	20.2
Associate professor	39	39.4
Professor	28	28.3
Years teaching in higher education		
5 years or less	14	13.7
6–10 years	19	18.6
11–15 years	12	11.8
16–20 years	16	15.7
21 or more years	41	40.2
Years teaching at current institution		
5 years or less	16	15.5
6–10 years	24	23.3
11–15 years	14	13.6
16–20 years	19	18.4
21 or more years	30	29.1
Primary assignment		
Administration	16	16.2
Basic/life sciences	19	19.2
Clinical sciences	43	43.4
Patient care	16	16.2
Research	5	5.1
Previous training as an educator		
No	67	68.4
Yes	31	31.6

except for data from the item: "In the last year, how many faculty development events have you participated in related to improving your instruction/teaching?" This was deemed appropriate for ANOVA because there were approximately 15 cases per variable level, which may mitigate issues related to nonnormality.[8]

Linearity of variables and homoscedasticity (errors in variance) are also important and are specific assumptions of linear regression. Standardized residuals were plotted against the predicted residuals on multiple scatterplots for all variables to understand data linearity and homoscedasticity. If the scatter dots resembled U shapes, this indicated curvilinear relationships (ie, nonlinear, scatter dot shapes like a bow tie or arrowhead pointing to one side indicate the presence of heteroscedasticity [unacceptable levels of error variance]).[9] The inspected data exhibited homoscedasticity.

Multicollinearity is also a specific issue within the context of multiple regression and occurs when 1 or more of the independent variables are highly correlated with 1 or more of the other independent variables. Data were explored for multicollinearity by inspecting bivariate correlations among variables over 70 as well as the variance inflation factors above 10. Examination of the data indicated that all bivariate relationships were under 60 and all variance inflation factor statistics were under 4, illustrating the absence of multicollinearity. Given these tests, the data appeared sound for assessment with both ANOVA and multiple regression analysis.

RESULTS

From the 200 potential faculty members, 109 responded, yielding a response rate of 53%. Table 1 reports the demographic characteristics of respondents. Examination of respondent demographics indicates a representative sample. Of the respondents, 67% resided on the main (of 3) campus, 62% were men, 68% were 50 years old or older, and 68% reported they held the rank of associate professor or professor. The majority of faculty (56%) reported having taught within higher education for 16 or more years. Furthermore, the majority of faculty educators were clinical (60%), within either clinical sciences or patient care, and 32% reported previous educator training. The predominant degree held by respondents was the doctor of chiropractic (75%), with 20% of respondents additionally holding master's degrees. Because this is a feasibility investigation, using a newly developed instrument, examining the psychometric properties of the data is important for substantive conjecture.

Reliability of Data

Because it was outside the scope of the current study to psychometrically examine the data for multiple dimensions, the subscales were treated as essentially tau equivalent based on the content and face validity present within each subscale.[10] As reported in Table 2, assessment of the reliability from the 5 major survey scales ranged

Table 2 - Reliability Statistics for Teaching and Continuing Education Subscales

	Subscale Reliability Statistics				
Data Subscale	α	Mean	Variance	SD	*k*
Importance of innovative teaching	0.859	21.78	16.79	4.10	5
Perceived personal strength related to innovative teaching	0.759	22.91	10.90	3.30	5
Importance of teaching characteristics	0.850	39.06	24.35	4.93	8
Perceived personal strength related to teaching characteristics	0.731	41.82	9.98	3.16	8
Continuing education and teaching/instruction development	0.787	11.29	24.98	5.00	6

SD = subscale standard deviation; k = *number of items within the subscale.*

Table 3 - Means, Standard Errors, and ANOVA Statistics for Structured Program Need by Assignment

	Administration ($n = 16$)	Basic/Life Science ($n = 17$)	Clinical Science ($n = 41$)	Patient Care (n = 15)	Research ($n = 5$)	*F*	*p*
A structured program focused on faculty development is needed at the college.	3.13 (.125)	3.17 (.167)	3.13 (.102)	3.20 (.145)	3.60 (.245)	.684	.605

from .731 to .859, indicating high reliability.[10] These high reliabilities indicate a diminished presence of measurement error within the data from the survey, also indicating fertile ground for detecting a truer picture of the relationship between regressed variables.[9]

The Need for an Academy of Educators

Overall, 89% of responding faculty either strongly agreed or agreed to the need for a focused faculty development program. Further evaluating the need for a focused faculty development program indicated only chance differences by faculty assignment (results reported in Table 3); however, significant differences occurred across years of teaching experience ($F[4, 91] = 3.046$, $p < .05$). Faculty having taught 6–10 years, on average, agreed that a focused faculty development program was needed ($M = 3.50$) when compared to those faculty having taught 21 or more years ($M = 2.95$, $p < .05$). Table 4 reports all the ANOVA results for the need of a structured program by years of teaching experience.

Willingness of Faculty Participation

Three questions assessed faculty willingness to engage in faculty development related to teaching and research. Respondents reported how willing they would be to engage in a program to improve teaching techniques, engage in educational research if better trained, and mentor other faculty members. Tables 5 and 6 report the ANOVA statistics for willingness to engage in faculty development by years teaching in higher education and faculty rank.

Years teaching in higher education yielded chance differences between groups for 3 items related to participation willingness. Overall, on average, faculty with 5 years or less teaching experience agreed more often that they would engage in educational research ($M = 3.00$), whereas faculty with 21 or more years of experience agreed less often ($M = 2.49$). Faculty with 6–15 years of teaching experience, on average, reported being willing to spend 11–15 hours developing their teaching, compared to faculty with 5 years or less teaching experience who reported being willing to spend 6–10 hours. Faculty with 6–10 years of teaching experience were more interested in mentoring other faculty ($M = 1.83$) compared to faculty with 11–15 years of experience ($M = 1.55$).

In addition, concerning faculty rank, no significant differences occurred between groups regarding faculty willingness to participate in a program to improve teaching or mentor other faculty members. Significant differences occurred, however, for faculty willingness to engage in educational research if better trained ($F[3, 83] = 3.493$, $p < .05$). Assistant professors were more willing to engage in educational research if better trained ($M = 3.06$), on average, when compared to professors ($M = 2.46$, $p < .001$). It appears that progressing through the ranks from assistant professor to professor indicates a steady decrease in willingness to participate in educational research.

Characteristics in Teachers and Teaching

Several questions targeted faculty perceptions concerning the importance of innovative teaching and characteristics associated with teachers, as well as their perceptions of their own strengths and weaknesses. Table 7 reports mean and gap information for respondents' ratings of perceived-importance and personal-strength scores for items related to important innovations and teaching characteristics.

Faculty rank did not exhibit predictive qualities concerning faculty perceptions of important teaching innovations or teacher characteristics. A predictive model occurred for years of teaching experience ($r^2 = .288$), indicating 2 inverse relationships for the innovation of incorporating technology ($\beta = -.284$, $t(75) = -2.182$, $p < .05$) and the characteristic of being accessible ($\beta = -.331$, $t(75) = -2.253$, $p < .05$). These findings indicate that although newer faculty members perceive incorporating technology as less important, they believe it is one of their personal strengths, whereas faculty with more teaching experience perceive incorporating technological innovations as highly important, but believe doing so a personal weakness. Likewise, newer faculty reported being accessible as less important but believed that being accessible was a personal strength, whereas older faculty believed that

Table 4 - Means, Standard Errors, and ANOVA Statistics for Program Need by Years Teaching

	5 yr or Less ($n = 13$)	6–10 yr ($n = 18$)	11–15 yr ($n = 11$)	16–20 yr ($n = 16$)	21 yr or More ($n = 39$)	*F*	*p*
A structured program focused on faculty development is needed at the college.	3.15 (.154)	3.50[a] (.121)	3.18 (.122)	3.31 (.151)	2.95[a] (.106)	3.046	.021

[a] Significant difference between groups ($p < .05$).

Table 5 - Means, Standard Errors, and ANOVA Statistics for Participation Willingness by Teaching Years

	5 y or Less ($n = 13$)	6–10 y ($n = 18$)	11-15 y ($n = 11$)	16–20 y ($n = 16$)	21 y or More ($n = 39$)	*F*	*p*
How many hours per year are you willing to engage in a program to improve your teaching techniques?	3.00 (.160)	2.75 (.250)	2.82 (.122)	2.80 (.200)	2.49 (.111)	1.548[a]	.201
Would you be interested in mentoring other faculty?	2.30 (.396)	3.06 (.392)	3.27 (.469)	2.71 (.438)	2.53 (.278)	.830	.510
I would engage in educational research if better trained.	1.70 (.153)	1.83 (.090)	1.55 (.157)	1.79 (.114)	1.70 (.081)	.766[a]	.552

[a] Indicates unequal variances between groups and the use of the Brown-Forsythe adjusted *F* value and corresponding Dunnett T3 post hoc tests when appropriate.

Response levels for each question were: "How many hours per year are you willing to engage in a program to improve your teaching techniques?" (0 = 0 hours, 1 = 1–5 hours, 2 = 6–10 hours, 3 = 11–15 hours, 4 = 16–20 hours, 5 = 21+ hours); "Would you be interested in mentoring other faculty?" (1 = no, 2 = yes); and "I would engage in educational research if better trained (4 = Strongly Agree, 3 = Agree, 2 = Disagree, 1 = Strongly Disagree).

being accessible was highly important but a personal weakness. The model accounted for 30% of the variance of the importance/strength gap, indicating that the model possesses moderate strength. Tables 8 and 9 report regression statistics for faculty rank and years teaching on important innovations and teaching characteristics.

DISCUSSION

The current study illuminated findings relevant to the study's research questions and trends that may provide direction for future chiropractic academies. These trends include the following.

1. The need for a faculty driven, faculty led teaching academy.

Although no relationship existed between faculty years of experience or rank with the need for a structured program, a large number of faculty members reported a willingness to participate. The majority of respondents (68%) reported no previous educator training, and 89% reported that a structured program to improve teaching was important and needed within their institutions.

2. Differences between junior and senior faculty members' willingness to participate.

Although only chance differences existed between rank and years of experience concerning faculty willingness to participate in instructional development, there appears to be a critical mass of educators with 6–10 years of experience who are motivated to participate in an academy and improve their teaching skills. This may provide an excellent mentoring opportunity for faculty with professor rank.

3. Differences in perceived strengths and weaknesses of junior and senior faculty members.

A strengths and weaknesses gap analysis indicates that a collaborative mentoring relationship between junior and senior faculty members may provide a mutually beneficial relationship for both. Using their perceived technology strengths, junior faculty could mentor more senior faculty with their perceived weakness in this area, and conversely, more senior faculty could use their perceived strengths in the area of time management

Table 6 - Means, Standard Errors, and ANOVA Statistics for Participation Willingness by Rank

	Instructor ($n = 11$)	Asst. Professor ($n = 18$)	Assoc. Professor ($n = 38$)	Professor ($n = 27$)	*F*	*p*
How many hours per year are you willing to engage in a program to improve your teaching techniques?	2.30 (.423)	3.35 (.373)	2.52 (.302)	2.76 (.312)	1.292	.283
Would you be interested in mentoring other faculty?	1.60 (.163)	1.65 (.119)	1.82 (.066)	1.70 (.098)	.898[a]	.449
I would engage in educational research if better trained.	2.80 (.200)	3.06[b] (.059)	2.64 (.144)	2.46[b] (.120)	3.493[a]	.022

[a] Indicates unequal variances between groups and the use of the Brown-Forsythe adjusted *F* value and corresponding Dunnett T3 post hoc tests when appropriate.

[b] Significant difference between groups ($p < .001$).

Response levels for each question were "How many hours per year are you willing to engage in a program to improve your teaching techniques?" (0 = 0 hours, 1 = 1–5 hours, 2 = 6–10 hours, 3 = 11–15 hours, 4 = 16–20 hours, 5 = 21+ hours); "Would you be interested in mentoring other faculty?" (1 = no, 2 = yes); and "I would engage in educational research if better trained (4 = Strongly Agree, 3 = Agree, 2 = Disagree, 1 = Strongly Disagree).

Table 7 - Mean and Gap Statistics for Important Innovations and Teacher Characteristics

	Perceived Importance		Personal Strength		
	n	Mean	*n*	Mean	Gap
Updated lectures[a]	90	4.80	87	5.01	0.21
New learning activities[a]	90	4.36	87	4.66	0.30
New assessment activities[a]	90	3.97	83	4.30	0.33
Incorporating technology[a]	90	4.30	85	4.64	0.34
Curriculum design[a]	89	4.31	82	4.27	−0.05
Good communicator[b]	90	5.43	88	5.35	−0.08
Content expert[b]	90	5.27	88	5.32	0.05
Team player[b]	90	4.39	87	5.26	0.88
Accessible[b]	90	4.79	87	5.28	0.49
Skilled leader[b]	90	4.31	88	4.97	0.65
Motivator[b]	90	4.81	88	5.05	0.23
Accountable[b]	90	4.96	87	5.47	0.52
Engaging[b]	89	5.06	86	5.10	0.05

[a] How would you rate the importance of innovations/your personal strength in the following areas of teaching?
[b] How would you rate the importance of/your personal strength in the following characteristics of a skilled educator?

skills and working with students to assist junior faculty with overcoming their perceived weaknesses. For junior faculty, such relationships have indicated increased understanding of educational processes and expectations, leading to more successful careers, which increases job satisfaction and faculty retention.[11,12]

Limitations

Like all research, this study has several limitations. Sparse comparative data restrict the authors' conjecture about the external validity of the data from the survey used in the current study. To our knowledge, this is the first study of its kind in chiropractic. Research on academies of education within the medical literature focuses on outcomes rather than the needs of the medical professoriate that would necessitate such an academy. For instance, although there is a detailed report regarding the structure, function, and outcomes of the CORD Academy for Scholarship in Education in Emergency Medicine, which began the academy movement within medicine,[10] the impetus for the academy appears to be an unpublished informal needs assessment.

Because this was a feasibility study, reliant upon convenience sampling, generalizability of the findings is limited to only those colleges where data collection occurred. However, although a convenience sample, demographic information for the resulting sample is similar to that of the profession. For instance, the population proportions for men (73%) and women (27%) in the chiropractic profession, as reported by the 2014 National Board of Chiropractic Examiners Job Analysis, fall within the margin of error for the proportion of men (62%; confidence interval [CI] = .49–.74) and women (38%; CI = .26–.50) in the current study. Lastly, because this study travels into the uncharted waters of assessing the need for an academy program, the authors cannot discuss the external validity of the collected data. However, given the content and face validity of the survey instrument, as well as high reliability of resulting data (ie, relatively low measurement error), perhaps this study will serve as a benchmark for future academy development within other chiropractic colleges.

Future Research Recommendations

Although several research studies have sought to quantify the outcomes and impact of academy programs in the field of medicine, few studies have sought to describe

Table 8 - Regression Statistics for Faculty Rank on Important Innovations and Teaching Characteristics

Personal Strength/ Importance	*β*	SE	*t*	*p*
Updated lectures[a]	0.104	0.147	0.630	0.531
New learning activities[a]	−0.122	0.149	−0.688	0.494
New assessment activities[a]	−0.070	0.134	−0.393	0.696
Incorporating technology[a]	−0.114	0.122	−0.806	0.423
Curriculum design[a]	0.187	0.128	1.146	0.256
Good communicator[b]	0.225	0.224	1.369	0.176
Content expert[b]	0.089	0.157	0.677	0.501
Team player[b]	−0.265	0.144	−1.692	0.096
Accessible[b]	0.006	0.149	0.042	0.967
Skilled leader[b]	0.157	0.149	0.917	0.363
Motivator[b]	−0.182	0.145	−1.118	0.268
Accountable[b]	0.093	0.196	0.608	0.545
Engaging[b]	−0.052	0.176	−0.368	0.714

[a] How would you rate the importance of innovations/your personal strength in the following areas of teaching?
[b] How would you rate the importance of/your personal strength in the following characteristics of a skilled educator?

Table 9 - Regression Statistics for Years Teaching on Important Innovations and Teaching Characteristics

Personal Strength/ Importance	*β*	SE	*t*	*p*
Updated lectures[a]	−0.033	0.204	−0.220	0.826
New learning activities[a]	0.044	0.206	0.271	0.788
New assessment activities[a]	0.025	0.188	0.154	0.878
Incorporating technology[a]	−0.284	0.169	−2.182	0.033
Curriculum design[a]	0.190	0.177	1.282	0.205
Good communicator[b]	0.086	0.300	0.593	0.556
Content expert[b]	0.135	0.221	1.112	0.271
Team player[b]	−0.262	0.197	−1.809	0.075
Accessible[b]	−0.331	0.252	−2.253	0.028
Skilled leader[b]	0.234	0.204	1.518	0.134
Motivator[b]	−0.108	0.202	−0.722	0.473
Accountable[b]	0.034	0.270	0.238	0.813
Engaging[b]	0.246	0.247	1.899	0.062

[a] How would you rate the importance of innovations/your personal strength in the following areas of teaching?
[b] How would you rate the importance of/your personal strength in the following characteristics of a skilled educator?

the experiences and impact of these programs from the qualitative perspective of academy participants. One future research direction is to collect the stories of participants to describe their experiences beyond the numbers and to uncover and detail the professional transformations that occur because of their engagement.

CONCLUSION

A structured approach, such as an academy, to professional teaching development may create many positive outcomes for an institution. Faculty educators in this cohort report being willing to engage in a program that may improve teaching methods as well as create opportunities for collaborative working relationships.

ACKNOWLEDGMENTS

Michael Tunning thanks India Broyles, advisor in the Master of Medical Education Leadership Program at University of New England for advice, proofreading, and editing.

FUNDING AND CONFLICTS OF INTEREST

This work was funded internally. The authors have no conflicts of interest to declare relevant to this work.

About the Authors

Michael Tunning is the associate dean of Clinical Sciences, Department of Academic Affairs, at Palmer College of Chiropractic (1000 Brady Street, Davenport, IA, 52803; michael.tunning@palmer.edu). Dustin Derby is the senior director for institutional planning and effectiveness at Palmer College of Chiropractic (1000 Brady Street, Davenport, IA, 52803; dustin.derby@palmer.edu). Kelly Krell-Mares is the faculty development program manager for the Center for Teaching and Learning at Palmer College of Chiropractic (1000 Brady Street, Davenport, IA, 52803; kelly.krell-mares@palmer.edu). Michelle Barber is the associate dean of Life Sciences and Foundations in the Department of Academic Affairs at Palmer College of Chiropractic (1000 Brady Street, Davenport, IA, 52803; michelle.barber@palmer.edu). Address correspondence to Michael Tunning, 1000 Brady Street, Davenport, IA, 52803; michael.tunning@palmer.edu. This article was received September 28, 2016, revised March 7, 2017, and accepted March 17, 2017.

Author Contributions

Concept development: MJT. Design: MJT, DCD, KAKM. Supervision: MJT. Data collection/processing: MJT, DCD. Analysis/interpretation: MJT, DCD. Literature search: MJT. Writing: MJT. Critical review: MJT, DCD, KAKM, MRB.

REFERENCES

1. Schindler B, Novack D, Cohen D, et al. The impact of the changing health care environment on the health and well-being of faculty at four medical schools. *Acad Med*. 2006;81(1):27–34.
2. Ward R. Separate and distinct: a comparison of scholarly productivity, teaching load, and compensation of chiropractic teaching faculty to other sectors of higher education. *J Chiropr Educ*. 2007;21(1):1–11.
3. Ulian J, Stritter F. Faculty development in medical education, with implications for continuing medical education. *J Contin Educ*. 2007;16(3):181–190.
4. Irby D, Cooke M, Lowenstein D, Richards B. The academy movement: a structural approach to reinvigorating the education mission. *Acad Med*. 2004;79(8):729–736.
5. Steinert Y, Nasmith L, McLeod P, Conochie L. A teaching scholars program to develop leaders in medical education. *Acad Med*. 2003;78(2):142–149.
6. Moses A, Heestand D, Doyle L, O'Sullivan P. Impact of a teaching scholars program. *Acad Med*. 2006;81(10 Suppl):S87–S90.
7. Steinert Y, McLeod P. From novice to informed educator: the teaching scholars program for educators in the health sciences. *Acad Med*. 2006;81(11)969–974.
8. Green SB, Salkind NJ. *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data*. Upper Saddle River, NJ: Pearson Education; 2003.
9. Osborne JW, Waters E. Four assumptions of multiple regression that researchers should always test. *Prac Assess Res Eval*. 2002;8(2):5.
10. LaMantia J, Yarris ML, Dorsman M, Deiorio NM, Wolf S. The Council of Emergency Medicine Residency Directors' (CORD) Academy for Scholarship in Education in Emergency Medicine: a five-year update. *West J of Emerg Med*. 2017;18(1):26–30.
11. Dimitrov D. *Quantitative Research in Education: Intermediate and Advanced Methods*. New York, NY: Whittier Publications; 2010.
12. Thorndyke L, Gusic M, George J, Quillen D, Milner R. Empowering junior faculty: Penn State's faculty development and mentoring program. *Acad Med*. 2006;81(7):668–673.